Rachel L. Storer

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Education

July 2012	Ph.D. Atmospheric Science *Colorado State University*, Fort Collins, CO Dissertation: Cloud-aerosol interactions: investigating the role of the ice phase Advisor: Dr. Sue van den Heever
Jan 2009	M.S. Atmospheric Science *Colorado State University*, Fort Collins, CO Thesis: Modeling aerosol effects on convection in differing storm environments Advisors: Dr. Graeme Stephens and Dr. Sue van den Heever
May 2006	B.S. Meteorology *Pennsylvania State University*, University Park, PA Graduated Cum Laude

Research Experience

April 2020 - Present	Assistant Researcher IV *JIFRESSE, UCLA/NASA Jet Propulsion Laboratory*
Nov 2017 - April 2020	Research Scientist I *Department of Atmospheric Science, Colorado State University*
July 2015 - Nov 2017	Postdoctoral Fellow *Department of Atmospheric Science, Colorado State University* Advisor: Professor Graeme Stephens Simulations and satellite studies of clouds and convection
May 2014 - April 2015	Postdoc Employee *Scripps Institution of Oceanography, University of California - San Diego* Advisor: Dr. Guang Zhang Improving convective parameterization of tropical convection
Dec 2012 - April 2014	Postdoctoral Research Associate *Department of Mathematical Science, University of Wisconsin - Milwaukee* Advisor: Professor Vince Larson

Improving the representation of deep convection in single column model simulations

Aug 2006 – July 2012 Graduate Research Assistant
Department of Atmospheric Science, Colorado State University
Advisors: Professors Graeme Stephens and Sue van den Heever
Investigated aerosol indirect effects on deep convection

Sep 2007 – June 2012 Weather Observer at Fort Collins Weather Station

July 2011 Field Campaign Participant
Ice in Clouds Experiment - Tropical (ICE-T) field campaign, St. Croix, VI
Worked in a team to provide daily forecasts and present daily forecast discussions
Provided preliminary analysis of data from SID-2H probe

Summer 2005 Research Experience for Undergraduates
Department of Meteorology, Pennsylvania State University
Topic: measuring potential aerosol mass
Mentors: Dr. William Brune, and Eunha Kang (Ph.D. candidate)
Assisted in instrumentation and lab work

Grants

- NASA ROSES 2018: CloudSat and CALIPSO Science Team, 2019-2022, Co-Investigator
- NASA ROSES 2018: Advanced Information Systems Technology, Co-Investigator

Peer Reviewed Publications

- Storer, R.L. and D.J. Posselt, 2019: Environmental impacts on the flux of mass through deep convection. *Q. J . R. Meterol Soc*; 145: 3832-3845.
- Stephens, G.L., S.C. van den Heever, Z.S. Haddad, D.J. Posselt, R.L. Storer, L.D. Grant, O.O. Sy, T.N. Rao, S. Kumar, S. Tanelli, and E. Peral, 2019: A distributed small satellite approach for measuring convective transport in the Earth's atmosphere. *IEEE Transactions*, 10pp.
- Storer, R.L., G.J. Zhang, and X. Song, 2015: Effects of convective microphysics parameterization on large-scale cloud hydrological cycle and radiative budget in tropical and midlatitude convective regions. *J. Clim.*, 28, 9277-9297.
- Storer, R.L., B.M. Griffin, J. Höft, J. K. Weber, E. Raut, V. E. Larson, M. Wang, and P. J. Rasch, 2015: Parameterizing deep convection using the assumed probability density function method. *Geosci. Model Dev.*, 8, 1-19.
- Storer, R.L., S.C. van den Heever, and T.S. L'Ecuyer, 2014: Aerosol induced convective invigoration observed in the tropical east Atlantic. *J. Geophys. Res.*, 119, 3963–3975.
- Storer, R.L., and S.C. van den Heever, 2013: Microphysical processes evident in aerosol forcing of tropical deep convective clouds. *J. Atmos. Sci.*, 70, 430-446.

- Storer, R.L., S.C. van den Heever, and G. L. Stephens, 2010: Modeling aerosol impacts on convective storms in different environments: *J. Atmos. Sci.*, 67, 3904-3915.

Selected Conference Presentations

- Storer, R.L., K.A. Schiro, and D.J. Posselt, 2020: The influence of moisture on the development of tropical deep convection in high resolution simulations. AMS Annual Meeting, Boston, Massachusetts.
- Storer, R.L., K.A. Schiro, and D.J. Posselt, 2019: Moisture controls on the behavior of simulated deep convection. Poster: AGU Fall Meeting, San Francisco, California.
- van den Heever, S.C., L.D. Grant, G.L. Stephens, Z.S. Haddad, R.L. Storer, O.O. Sy, D.J. Posselt, 2018: The challenges of representing vertical motion in numerical models, Proc. SPIE 10782, Remote Sensing and Modeling of the Atmosphere, Oceans, and Interactions VII, 1078204.
- Storer, R.L., 2018: Clouds in a changing climate (*Invited*), AAPT Winter Meeting, San Diego, California.
- Storer, R.L., D.J. Posselt, and G.L. Stephens, 2017: Water balances of deep convection. GEWEX UTCC PROES Meeting, New York, New York.
- Storer, R.L., G. L. Stephens, and S. C. van den Heever, 2016: Do deep convective water budgets change in a warmer climate? International Conference on Clouds and Precipitation, Manchester, UK.
- Storer, R.L. and S.C. van den Heever, 2011: Examining aerosol indirect effects on tropical deep convection. Poster: AMS Annual Meeting, 3rd Symposium on Aerosol-cloud-climate interactions, Seattle, Washington
- Storer, R.L., S.C. van den Heever, and G.L. Stephens, 2009: Modeling aerosol impacts on convective storms in different environments. Session 7, AMS 13th Conference on Mesoscale Processes, Salt Lake City, Utah.

Teaching Experience

July 2009, July 2010	Trainer for Academic Professionals, Weather and Climate for Teachers *Center for Multiscale Modeling of Atmospheric Processes, Colorado State University*
Fall 2009	Graduate Teaching Assistant *Department of Atmospheric Science, Colorado State University* AT 540 Daily Weather Lab
Spring 2008	Graduate Teaching Assistant, Laboratory Instructor *Department of Atmospheric Science, Colorado State University* AT 350 Introduction to Weather and Climate AT 351 Introduction to Weather and Climate Lab

Professional and Outreach Activities

Awards *2011: Third place student poster award, AMS annual meeting, 2010: Herbert Riehl Memorial Award, 2006: Colorado State Graduate Fellowship*

Reviewer *Journal of the Atmospheric Sciences, Geophysical Research Letters, Journal of Geophysical Research - Atmospheres, Nature Communications, Nature Geoscience, Quarterly Journal of the Royal Meteorological Society, Atmospheric Chemistry and Physics, Atmosphere, Atmospheric Measurement Techniques,*

Member *American Geophysical Union, American Meteorological Society, Climate Voices, Earth Science Women's Network*

Panelist

- NASA ROSES, Applied Science Program, 2018
- NASA SMD Independent Product Review, 2018

Session Cochair

- Atmospheric Convection: Processes, Dynamics, and Links to Weather and Climate, 2019 AGU Fall Meeting
- Convective Clouds: Processes, Dynamics, and Links to Weather and Climate, 2018 AGU Fall Meeting
- Upper Tropospheric Clouds and Convection: Processes, Dynamics, and Feedbacks in Weather and Climate, 2017 AGU Fall Meeting

Workshops

- Completed the SciFund Challenge outreach 101 course, Fall 2014
- Attended "Defining Your Research Identity" workshop, hosted by the Earth Science Women's Network, Boulder, CO, June 2011

Public Talks

- "Climate Change in Coastal California", talk at Sierra Club meeting, Temecula, CA, June 2015
- Talk for Earth Day Green Faith event, Foothills United Methodist Church, La Mesa, CA, April 2015
- Part of a group talking about severe weather and storm chasing, Loveland High School, Loveland, CO, May 2010,2011
- Talk for a senior living community about severe weather and storm chasing, Fort Collins, CO, Summer 2010